

Centre for Research on Peace
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**Conceptualising and Measuring
Social Cohesion in Africa:
Towards a perceptions-based
index**

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Abstract

Social cohesion is a key concept in development studies. Weak social cohesion is often related to slow economic growth and (violent) conflict. So far few attempts have been made to measure this complex concept in a systematic manner. This paper introduces an innovative method to measure national-level social cohesion based on survey data from 19 African countries. We distinguish three dimensions of social cohesion; i.e. the extent of perceived inequalities, the level of societal trust, and the strength of people's adherence to their national identity. Importantly, our social cohesion index is based on individuals' *perceptions* vis-à-vis these three different dimensions of social cohesion rather than certain macro-level 'objective' indicators such as GDP/capita or Gini-coefficients. We develop two social cohesion indices: a national average Social Cohesion Index (SCI) and a Social Cohesion Index Variance-Adjusted (SCIVA); the latter one takes into account the level of variation across different ethnic groups within countries. The SCI and SCIVA are computed for and compared across nineteen African countries for the period 2005-2012 on the basis of Afrobarometer survey rounds 3, 4 and 5. We also investigate quantitatively the relationship between countries' levels of social cohesion and the occurrence of a range of conflict events. As expected, we find that countries with low levels of social cohesion in a particular year according to our SCI are more likely to experience a range of different conflict events in the subsequent year.

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1. Introduction

Lack of Social Cohesion (sc) has been a major challenge for many multiethnic societies. Weak sc has been linked to numerous problems, including low public expenditure, low growth and violent conflict. However, while there has been considerable discussion of sc and widespread recognition of its importance, there have been few attempts to measure it (Easterly et al. 2006, de Haan and Webbink 2011, Foa 2011).

Social cohesion (sc) is a complex concept, which incorporates a number of elements. At its heart is the notion that relationships among members and groups in society are sufficiently good that all feel a sense of belonging, that they perceive the whole society as greater than the parts, and when differences develop, they can be dealt with peacefully. Thus, social cohesion is not only good in itself, as it improves the quality of the societies in which people live, but also because it is likely to help avoid violent conflict with all its attendant ills. Moreover, Easterly et al. (2006) also argue that social cohesion is positively related to 'good' institutions and, as a result, to economic growth. Despite its importance, social cohesion is rarely quantified and measured. Yet measurement is needed if we are to investigate causes and consequences of sc empirically. Moreover, the attempt to measure a complex concept, although difficult and to some extent arbitrary, also forces clarity of definition.

This paper presents an initial attempt to measure sc, and applies it to a range of African countries for which we have relevant nationally representative survey data. We use African cases both because there is consistent data across these countries, and, more importantly, because it is a region where there are evidently serious problems of deficient (and variable) social cohesion.

In the first part of the paper we discuss alternative definitions of social cohesion that have been advanced. In light of this, we then distill three components that include the

major elements of the various definitions which will provide the basis for our measurement. We should note that in doing so pragmatic considerations of data availability to a certain extent affect our chosen definition. In the second part we develop a social cohesion index (SCI) and a variance-adjusted social cohesion index (SCIVA). In section 3, we apply the SCI to nineteen countries for which we have data from surveys conducted between 2005 and 2012. In Section 4 we investigate whether there is a correlation between the measures of social cohesion and outbreaks of various types of violence. Section 5 concludes.

2. Defining and conceptualising social cohesion

The complexity of the concept of sc is illustrated by the variety of definitions adopted in the quotations below.

Social cohesion is ‘the capacity of a society to ensure the well-being of all its members – minimising disparities and avoiding marginalisation – to manage differences and divisions and ensure the means of achieving welfare for all members’ (Europe 2007: 2).

A cohesive society works towards the well-being of all its members, minimising disparities and avoiding marginalisation. It entails three major dimensions: fostering cohesion by building networks of relationships, trust and identity between different groups; fighting discrimination, exclusion and excessive inequalities; and enabling upward social mobility (Background document to OECD Conference on Social Cohesion and Development, 20-21st January, 2011).

Social cohesion is an attribute of societies which implies **equality of opportunity** so that people can exercise their fundamental **rights** and ensure their welfare, without discrimination of any kind and in response to diversity. From an individual perspective, it assumes the existence of people who feel part of a community, **participate** in decision-making areas and can exercise active citizenship. It also involves the development of **public policies** and mechanisms of **solidarity** between individuals, groups, territories and generations (International and Ibero-American Foundation for Administration and Public Policies 2011).

Social cohesion ‘describes bonds or ‘glue’ that brings people together to in a society, particularly in the context of ethnic diversity’ (Schmeets 2012: 128).

Social cohesion ‘has to do with the quality and nature of connections between people and groups’ ‘At its essence, social cohesion embodies a *convergence across groups* that provides an overarching structure for collective life’ (Marc et al. 2013: 3).

‘... we define **social cohesion** as the nature and extent of social and economic divisions within society. These divisions – whether by income, ethnicity, political party, caste, language, or other demographic variables

– represent vectors around which politically salient societal cleavages can (although not inevitably or “naturally”) develop. As such, socially cohesive societies ... are not necessarily demographically homogenous, but rather ones that have fewer potential and/or actual leverage points for individuals, groups, or events to expose and exacerbate social fault lines, and ones that find ways to harness the potential residing in their societal diversity (in terms of diversity of ideas, opinions, skills, etc.)’ (Easterly et al. 2006: 4-5).

‘**Social cohesion** involves building shared values and communities of interpretation, reducing disparities in wealth and income, and generally enabling people to have a sense that they are engaged in a common enterprise, facing shared challenges, and that they are members of the same community’ (Maxwell 1996: 13)

As the quotations above show, social cohesion has been defined in many ways. Two distinct elements have been identified, and classified as European and North American approaches to the idea (Hooghe 2012). On the one hand, Europeans emphasise the role of social exclusion, or inequalities and marginalisation, as weakening social cohesion. A fundamental aspect of a socially cohesive society is then shared perceptions that the distribution of power and material resources is fair. The European approach focuses on the role of government in ensuring that this objective is achieved (Europe 2007, Bécares et al. 2011). On the other hand, the North American approach places much more emphasis on the behaviour and beliefs of individuals in relation to each other: their links with one another (in what is often defined as ‘social capital’); shared norms of behaviour; agreed intersubjective meaning (or shared understandings); and high levels of trust in others, to describe the bonds that bring people together and the result of this (‘solidarity’) (Cole 1988, Putnam 2000).

We build on the insights of both European and American approaches, emphasising three types of relationships as relevant to social cohesion: firstly, relationships among individuals of the same group; secondly relationships among individuals across groups; and thirdly, relationships between individuals and groups and the state. For multiethnic societies, relationships among ethnic groups are particularly relevant to sc, and consequently we focus primarily on such relationships. Although the concept of ethnicity is contested, it is an important identity marker especially in Africa (see e.g. Eifert, et al., 2010; Bangura, 2006; Mustapha, 2000; 2006; Nnoli, 1995; Melson & Wolpe, 1971; Ukiwo, 2005; Young, 1985). The approach taken to ethnicity in this paper is broadly a constructivist one: ethnic groups are considered to be constructed historically according to various identity markers, such as ancestry, language and region of origin. Although the constructivist view of ethnicity posits that ethnic

boundaries are malleable and fluid, it also emphasises that the reshaping of group identities is costly (Bates 2004). In line with such a constructivist view, we assume that ethnic group boundaries are likely to be fairly stable at any particular point in time, allowing us to use ethnic categories without holding a primordial view (Brown and Langer 2010).

We argue that social cohesion is essentially a matter of how individuals *perceive* others and the state and not of more 'objective' measures of interactions, although these perceptions are likely to be the outcome of actual interactions and we would expect considerable correlation between the two. In principle, the concept of social cohesion could apply to a particular country, region, subregion or community. In this paper we use nationally-representative survey data for nineteen African countries to assess and measure the evolution of social cohesion over time. In order to make a large and rather amorphous concept measurable and usable, we operationalise the concept by identifying perceptions of three critical components of societal relationships and attitudes: inequalities, trust, and identities.

Inequalities.

The first component is the extent of perceived *inequalities* both horizontal and vertical. The inclusion of inequalities stems from the European approach. Horizontal (or group) inequalities (HIs) are particularly critical for sc in multiethnic societies because it is sharp inequalities between ethnic (or religious or regional) groups that usually fuel political conflict, often leading to violence (Stewart 2008, Cederman, Weidmann et al. 2011). Political, cultural, and social HIs are all relevant to sc, as well as economic inequalities. Relevant here is not only perceived group inequalities, but perceptions of fair or unfair treatment by the government. In addition, vertical inequalities, or inequalities among individuals, (VIs), are also relevant, since high and rising vertical inequality can undermine bonds among people (Uslaner 2008). One would expect less sc in highly unequal societies, since the feeling of belonging to a shared national project is likely to be less.

Trust.

The second component is perceptions of the level of trust among people generally, and particularly across groups, and in relationship to the state. This is a powerful indicator of how cohesive a society is – of the strength of the 'glue' that binds people together within a particular society. This element broadly reflects the North American perspective on social cohesion. Where trust across groups is low, conflict is more likely

(Gambetta 1988)¹ and economic progress can be impeded (Knack and Keefer 1997, Beugelsdijk et al. 2004, Zak and Knack 2001). Trust in state institutions is also highly relevant, given the importance of the state both in shaping economic and social relationships, and people's lives more generally, while lack of trust in state institutions may lead to violent protests and uprisings.

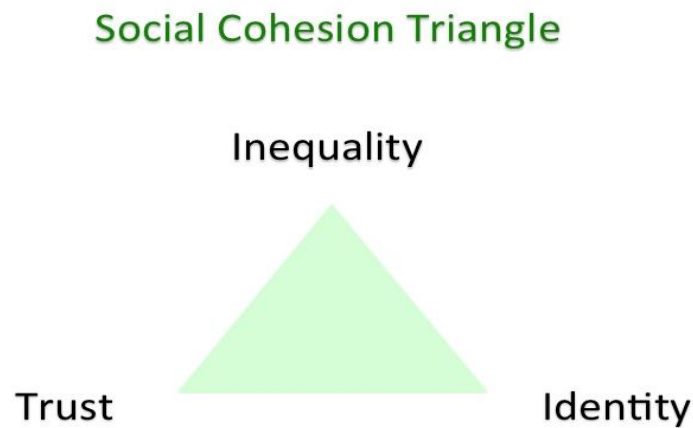
Identities.

The third critical element of social cohesion in multiethnic societies is the strength of people's adherence to national identity in relation to their group (or ethnic) *identity*. This component is important for multiethnic societies, especially those, such as in Africa, where national boundaries have not developed organically and nations are not natural units, but were created relatively recently by colonial powers. The strength of identities is related to perceived importance of HIs, since if group identities are relatively weak HIs may not be perceived at all, or if perceived, not regarded as important. People's perceptions of their identity are also relevant to social cohesion, because group conflict is more likely if group identities are perceived as strong relative to national ones. Conversely, if people put major emphasis on national identities it indicates that they regard themselves as involved in a shared national project. We need to emphasise that this does not imply that giving importance to group identity is inconsistent with sc. In flourishing multiethnic societies, people may value both their group and their national identities. The term 'multiculturalism' (Kymlika 1995) is sometimes used to describe such a society – one which allows for “the rich tapestry of human life and the desire amongst people to express their own identity in the manner they see fit.” (Bloor 2010: 272). However, some have interpreted multiculturalism as involving the separate living of groups with limited interactions among them, which may clearly undermine national sc. Multiculturalism has consequently been displaced by monoculturalism in some European countries, with assimilation to the dominant culture being actively advocated. Yet, this too is likely to undermine sc because it causes resentment among the groups whose cultures are suppressed. A socially cohesive society requires diversity *and* unity, with both group and national identity valued. Only where group identities take strong precedence over national ones is national cohesion likely to be threatened.

¹ There is, of course, a two-way relationship between conflict and trust; Low trust makes conflict more likely, but conflict can also destroy trust (see e.g. Spence 1999; Warren 1999).

To provide a simplistic depiction of our approach, sc can be represented as a triangle composed of each of the three components (see Figure 1).

Figure 1: Social Cohesion Triangle



The three vertices of the triangle are not entirely independent – indeed each influences the others. Thus, where HIs are high, ethnic identities are likely to be enhanced at the expense of national identities, while, as already noted, where people place much emphasis on national as against group identities, people may not feel that high HIs are unfair - they may not even notice them (Langer and Smedts 2013). In addition, placing emphasis on group identities is likely to be associated with reduced trust across groups and there is also evidence that trust falls with rising inequality (Rothstein and Uslaner 2005, Bjørnskov 2007). Despite their interconnectedness, the three elements are not only theoretically sufficiently independent of each other for all three of them to be included in any composite measure of sc, but also empirically the three elements appear to be clearly independent, as substantiated by their low correlations (see below).

Violent national conflict is both a symptom and a consequence of lack of sc. Indeed the absence of violent conflict has sometimes been suggested as a defining characteristic of the presence of social cohesion. However, we reject this view here for two reasons: first, because it is important to be able to investigate whether sc causes conflict and consequently we do not want to include it in the definition of sc; secondly, societies can have weak sc without experiencing violent conflict – for example, this could be the case in a ‘silo’ society where groups are separate, with few links and little trust in each other, and yet not suffer conflict, possibly because of low HIs or active

policies to reduce HIs, as in Malaysia (Fenton 2009); or it might be the case where a strongly repressive government effectively prevents conflict despite weak sc (such as Togo under Gnassingbé Eyadema).

Below we consider ways of developing and measuring a composite index which incorporates the three components of the sc triangle. As emphasised above, the extent of sc in a country is essentially based on people's perceptions. Importantly, it is not a matter of identities or trust as seen by some outsider, but how people themselves perceive them. Similarly, when it comes to inequalities – for which more objective measures are possible than for trust or identities – it is perceptions of being in an equal or unequal society which determine sc rather than the more objective measures. Hence, in order to construct our index of social cohesion we rely on surveys which report on people's perceptions regarding these issues.

Our aim is to develop a national index of sc. Yet, perceptions may differ across groups, and this too is of relevance to sc. Thus, a society where all groups have roughly the same views is likely to be more cohesive than one where some groups report high levels of trust, strong national identities and limited inequalities, while others report the opposite. The very difference in views qualifies the extent of sc, whatever the national average sc index. To allow for this we develop a national index (Social Cohesion Index – SCI) and then sub-indices for particular groups (SC_i, where subscript *i* represents a particular group). We then modify the SCI by the coefficient of variation among the sub-groups measures of SC, and in this way we develop an inequality-adjusted national sc - i.e. a Variance-Adjusted Social Cohesion Index or SCIVA².

3. Towards a perceptions-based social cohesion index

A composite societal indicator is appropriate in the case of a complex concept composed of a number of elements. As argued above, this is the case for sc which is composed of several distinct characteristics, which together represent an important aspect of the state of societal relations. In this way, it is similar to Human Development, which is also composed of a number of elements, and is measured in a composite index, the Human Development Index.

² This is similar to the inequality-adjusted Human Development Index of the UNDP. For more information: <http://hdr.undp.org/en/content/inequality-adjusted-human-development-index-ihdi>.

According to the OECD Handbook on composite indicators (OECD 2008), among other characteristics, a good composite indicator needs to:

- Summarise complex multidimensional issues to assist policy makers;
- Be easier to interpret than by looking at the components separately;
- Help rank countries at one time and progress over time;
- Facilitate communication with the general public.

In addition, the elements that make up the indicator need to be sufficiently independent that they cannot be measured accurately by one of the indicators alone, and change in any element should be reflected by a change in the SCI in the same direction (i.e. it is monotonically increasing or decreasing in any of its components).³ Finally, the index should be helpful for research, by permitting the testing of hypotheses concerning causes and effects of the phenomenon under consideration.

In order to test the feasibility and usefulness of our Social Cohesion Index (SCI), we use data from the Afrobarometer surveys. These surveys are conducted in around 20 African countries (increasing to 33 in Round 5 which was conducted in 2012) and are repeated on a regular basis (every 3-5 years). The surveys are nationally representative and contain a standard set of questions aimed at measuring people's social, political, and economic attitudes over time⁴. The Afrobarometer surveys include a number of useful questions for assessing people's attitudes and perceptions regarding the three constituent elements of the concept of social cohesion, as proposed above: inequality, trust, and identity. Table 1 shows the questions which we have selected to construct our SCI.

Before discussing the way we have aggregated the different questions into our perceptions-based SCI, we should emphasize that due to data limitations our approach at operationalizing the social cohesion concept is only a first approximation and we therefore have to be cautious in interpreting the results. While the Afrobarometer surveys provide a wealth of interesting data, they do not contain all the questions we would ideally want in order to operationalize the concept of social cohesion perfectly as set out above. In addition, some of the questions relevant to the operationalization of our concept were slightly rephrased or were dropped from some survey rounds, which forced us to omit some potentially useful questions in order to obtain consistency

³ This can be measured by the Cronbach coefficient (see e.g. Deafys et al. 2011; Hooghe 2012; Lord and Novick 1968).

⁴ See for more information on Afrobarometer surveys: www.afrobarometer.org.

across years. Despite these caveats, we think it is useful to explore the evolution of social cohesion on the basis of the selected questions.

We use a very straightforward aggregation method for the SCI. For each question we differentiate the more socially cohesive answers from the less socially cohesive ones (see the third column in Table 1). We subsequently calculate the proportion of respondents giving the more socially cohesive answers. There is just one indicator for identity. But for the other two elements, we have more than one indicator, so to obtain a single measure of these elements of social cohesion, we average the different indicators. Subsequently, in line with the conceptualisation of the concept, the resulting three proportions are given equal weights in aggregating them into a social cohesion index. This results in an index ranging from zero to one, with zero corresponding to a non-cohesive society and one corresponding to a highly cohesive society.

Table 1: Overview of the Afrobarometer questions used to construct the SCI

Afrobarometer question	Answering options	Social Cohesion Index
CLUSTER 1: INEQUALITY		
“In general, how do you rate your living conditions compared to those of other [Ghanaians/Kenyans/etc.]?”	1 = Much worse 2 = Worse 3 = Same 4 = Better 5 = Much better	Proportion of respondents who believe their living conditions is the “same” compared to other compatriots.
“How often are _____ [Respondent’s Ethnic Group] treated unfairly by the government?”	0 = Never 1 = Sometimes 2 = Often 3 = Always	Proportion of respondents who believe their ethnic group is “never” treated unfairly by the government
CLUSTER 2: TRUST		
INSTITUTIONAL TRUST		
“How much do you trust each of the following, or haven’t you heard enough about them to say: 1. The President 2. Parliament 3. Police 4. Courts of law	0 = Not at all 1 = Just a little 2 = Somewhat 3 = A lot	Proportion of respondents who trust “A lot”
INTERPERSONAL TRUST		
“How much do you trust each of the following types of people?*” 1. Your relatives 2. Other people you know 3. Other [Ghanaians/Kenyans/etc.]	0 = Not at all 1 = Just a little 2 = Somewhat 3 = A lot	Proportion of respondents who trust “A lot”
CLUSTER 3: IDENTITY		
“Let us suppose that you had to choose between being a [Ghanaian/Kenyan/etc.] and being a _____ [Respondent’s Ethnic Group]. Which of the following best expresses your feelings?”	1 = I feel only (Respondent’s Ethnic Group) 2 = I feel more (Respondent’s Ethnic Group) than [Ghanaian/Kenyan/etc.] 3 = I feel equally [Ghanaian/Kenyan/etc.] and (Resp. Ethnic Group) 4 = I feel more [Ghanaian/Kenyan/etc.] than (Resp. Ethnic Group) 5 = I feel only [Ghanaian/Kenyan/etc.]	Proportion of respondents who feel “More [Ghanaian/Kenyan/etc.] than (Respondent’s Ethnic Group)” or “Only [Ghanaian/Kenyan/etc.]”

* The interpersonal trust question is slightly different in Round 3 and 4 versus Round 5. Rounds 3 and 4 ask for “Trust relatives”, “Trust neighbors”, “Trust people from own ethnic group” and “Trust people from other ethnic groups”. Round 5 asks for “Trust relatives”, “Trust neighbors” and “Trust other people you know”.

Assuming that the combined set of questions in each Round measures interpersonal trust, we take the average over the different questions as a proxy for interpersonal trust.

4. Social cohesion in Africa

Using the Afrobarometer data, we proceed to estimate the SCI for nineteen countries in Africa – see Table 3 below.⁵ We use data from three rounds of the Afrobarometer, 2005, 2008 and 2012. Before reporting the results of the above SCI methodology, we first summarize the correlations among the three components of our social cohesion index pooling the data across the rounds of enquiry and the nineteen countries. This information is needed to assess whether the three elements are sufficiently independent to form individual components of the composite index. As can be seen from Table 2, the correlations among the different components are low. When testing for the significance of these correlations, there is only a non-zero correlation between inequality and identity (at 99% significance level). Though significant the correlation is limited in size. The correlations between inequality and trust, on the one hand, and between trust and identity, on the other hand are not statistically different from zero. We therefore conclude that the different components provide independent information and capture distinct aspects of societal perceptions.

Table 2: Correlations between SCI components

	Inequality	Trust	Identity
Inequality	1.000		
Trust	0.202	1.000	
Identity	0.410***	0.176	1.000

The results of our SCI analysis can be found in Table 3 for the survey rounds of 2005, 2008 and 2012. The countries are ordered according to increasing SCI for 2012. We see large cross-country differences with Nigeria as the least cohesive country in 2012 (SCI 0.183) versus Senegal, the most cohesive country (SCI 0.604).

⁵ Please note that we can only include countries for which we have data for more than one survey round. Hence even though the Afrobarometer Round 5 survey was conducted in 33 countries, in about 13 countries it was the first time that the Afrobarometer survey was conducted.

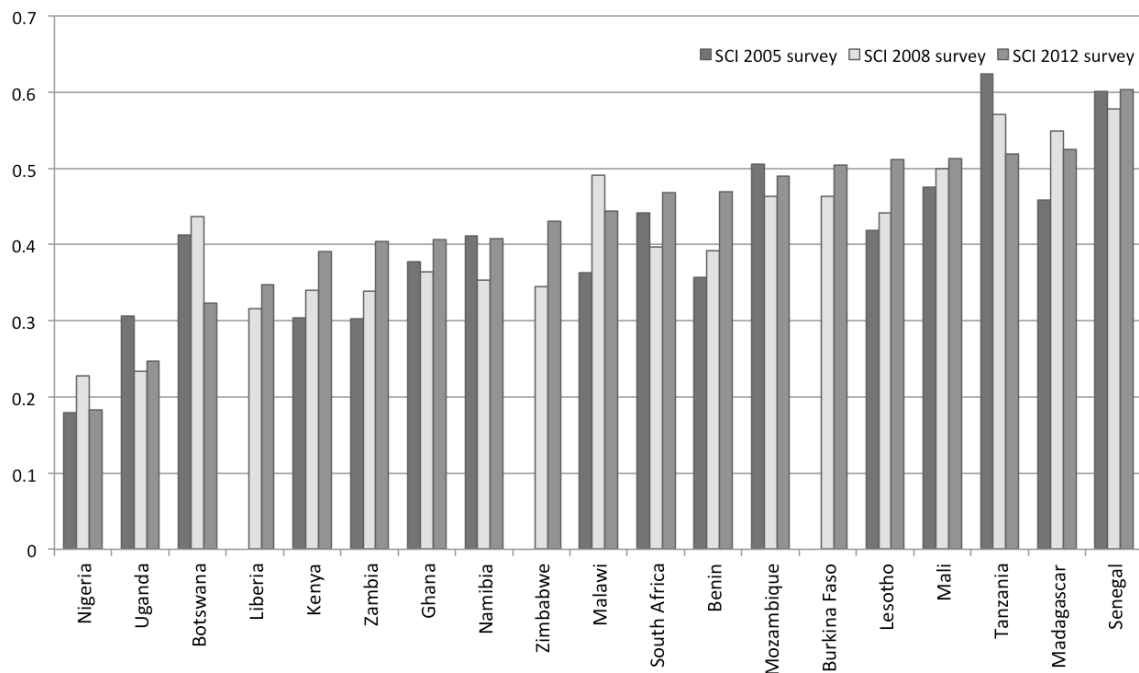
Table 3 reports on the three components of inequality, trust and identity which make up the SCI. This decomposition gives insights into the drivers of social cohesion, which is relevant to the design of policy aimed at increasing social cohesion. Several conclusions emerge. First, the trust component has the lowest scores of the three SCI components in half or more of the countries in each of the rounds. Second, whereas most countries achieve a fairly similar ranking across the different drivers some countries score particularly high/low for a single indicator. Madagascar is a clear example of scoring poorly on a single component. While both inequality and identity point towards a high level of social cohesion, lack of trust scales down the final social cohesion indicator in each of the rounds. An opposite example is provided by Malawi where respondents have a high level of trust, but their perceptions of inequality among ethnic groups and of weak national identity reduces their SCI ranking.

Country rankings on the SCI remain broadly constant across the rounds. Nigeria is the least cohesive country in each year, while Tanzania, Senegal and Madagascar consistently rank as the top three. But some countries change their relative position over time. For example, whereas Botswana is in a middle position in 2005, it drops over the eight year period to being a poorly cohesive country. The opposite trend can be observed for Malawi which has seen a relative increase in social cohesion over time. For the group of countries as a whole, some convergence can be observed between 2005 and 2008, as the least cohesive societies become more cohesive in absolute terms, and the most cohesive societies become less cohesive, but there is divergence again between 2008 and 2012. No clear pattern can be observed in the underlying drivers.

As well as analyzing social cohesion in relative terms, we also analyze the absolute time-series dynamics. This evolution in SCI over the three survey rounds is plotted in Figure 2. Some countries experience a substantial improvement in social cohesion. For example, Benin experiences a steady increase in social cohesion from 0.357 in 2005 to 0.469 in 2012, or an absolute increase in social cohesion of 11%. A similar evolution can be observed in Kenya, Zambia, Zimbabwe and Lesotho which become more cohesive over time. On the other hand, there are a number of countries whose societies became much less cohesive; Tanzania is an example, even though it remained consistently cohesive relative to most other countries; and Botswana showed a big fall between 2008 and 2012. The constituent elements moved in the same direction for some countries, but in different directions for others. For example, in Mali the SCI rose consistently as did the identity element, but inequality first improved and then worsened and trust got worse and then improved. To understand this evolution better, one obviously has to do a careful historical and political analysis of each country.

Table 3: SCI scores over time

	2005 survey				2008 Survey				2012 Survey			
	SCI	Inequality	Trust	Identity	SCI	Inequality	Trust	Identity	SCI	Inequality	Trust	Identity
Nigeria	0.179	0.228	0.133	0.176	0.228	0.196	0.153	0.336	0.183	0.288	0.120	0.141
Uganda	0.306	0.279	0.341	0.299	0.234	0.231	0.237	0.234	0.247	0.242	0.289	0.211
Botswana	0.412	0.521	0.345	0.371	0.436	0.539	0.362	0.407	0.324	0.490	0.270	0.210
Liberia	NA	NA	NA	NA	0.316	0.445	0.272	0.232	0.347	0.499	0.277	0.265
Kenya	0.304	0.305	0.213	0.392	0.340	0.292	0.249	0.478	0.391	0.365	0.247	0.562
Zambia	0.303	0.415	0.205	0.289	0.338	0.407	0.375	0.233	0.404	0.538	0.333	0.339
Ghana	0.377	0.365	0.368	0.396	0.365	0.382	0.405	0.307	0.407	0.479	0.273	0.469
Namibia	0.411	0.358	0.315	0.559	0.353	0.311	0.401	0.348	0.408	0.371	0.414	0.437
Zimbabwe	NA	NA	NA	NA	0.345	0.386	0.289	0.360	0.431	0.514	0.243	0.535
Malawi	0.363	0.231	0.577	0.283	0.491	0.374	0.521	0.578	0.444	0.353	0.552	0.426
South Africa	0.442	0.422	0.293	0.612	0.397	0.328	0.243	0.620	0.468	0.464	0.239	0.700
Benin	0.357	0.412	0.265	0.395	0.392	0.453	0.227	0.494	0.469	0.469	0.346	0.590
Mozambique	0.505	0.487	0.551	0.477	0.464	0.457	0.531	0.403	0.490	0.492	0.477	0.502
Burkina Faso	NA	NA	NA	NA	0.463	0.483	0.463	0.442	0.504	0.568	0.456	0.487
Lesotho	0.418	0.635	0.344	0.275	0.441	0.521	0.435	0.368	0.512	0.629	0.370	0.536
Mali	0.475	0.618	0.507	0.302	0.500	0.634	0.379	0.487	0.513	0.606	0.420	0.513
Tanzania	0.624	0.452	0.528	0.890	0.571	0.499	0.422	0.790	0.519	0.491	0.386	0.680
Madagascar	0.458	0.761	0.130	0.484	0.549	0.738	0.208	0.702	0.525	0.721	0.133	0.722
Senegal	0.601	0.666	0.649	0.489	0.578	0.664	0.481	0.588	0.604	0.699	0.572	0.541

Figure 2: The time-series evolution of social cohesion

Variation-Adjusted Social Cohesion Index

Of course, analysing a measure of social cohesion at the level of a country could miss important group differences within each country. It is reasonable to believe that the impact and effect of social cohesion would depend on whether perceptions of the three elements differ across groups. If individuals that assign a low/high score to social cohesion are clustered within groups, instead of being randomly distributed between groups, uneven perceptions of social cohesion could have an impact on the overall social cohesion of a society. To obtain a measure of social cohesion that properly accounts for group dynamics, we can incorporate observed group clustering. This can be done by correcting the country-level SCI for the variation that exists between groups of a country.

To analyze whether such group clustering is present, we recompute social cohesion on an ethnic group level, since this is an important group classification in most African countries. We then summarize this variation across ethnic groups in a measure of statistical variation and construct a variation-adjusted social cohesion measure SCIVA:

$$SCIVA = SCI \times (1 - CV)$$

where CV is the coefficient of variation in social cohesion, computed over ethnic groups.⁶

⁶ This coefficient of variation, along with alternative measures of variation are reported in Appendix A.

Table 4 summarizes the resulting variation-adjusted social cohesion indices, and shows the difference from the original social cohesion index. This gives an idea of the importance of introducing such a correction for group clustering. Table 4 shows that group clustering is indeed important, and reduces the social cohesion index by 3% to 5%. For some countries the reduction is even larger -- up to 9% for Uganda (2005), 7% for Namibia (2005) and 7% for Tanzania (2012). Such high corrections imply that social cohesion is clustered within groups, and large differences exist between groups. Interestingly, when comparing the evolution of the social cohesion indices over time with the evidence on group variation, the results seem to suggest that large reductions in social cohesion (e.g. as observed for Uganda) go hand in hand with large group variation.

Table 4: Variation-adjusted social cohesion index (SCICV)

	2005 survey		2008 survey		2012 survey	
	SCIVA	Diff	SCIVA	Diff	SCIVA	Diff
Nigeria	0.135	-0.044	0.180	-0.048	0.162	-0.021
Uganda	0.214	-0.092	0.159	-0.075	0.191	-0.056
Botswana	0.369	-0.043	0.394	-0.042	0.288	-0.036
Liberia	NA	NA	0.283	-0.033	0.311	-0.036
Kenya	0.258	-0.046	0.283	-0.056	0.339	-0.044
Zambia	0.244	-0.058	0.286	-0.053	0.351	-0.052
Ghana	0.349	-0.028	0.321	-0.044	0.339	-0.068
Namibia	0.339	-0.072	0.305	-0.048	0.348	-0.060
Zimbabwe	NA	NA	0.299	-0.046	0.363	-0.067
Malawi	0.330	-0.033	0.444	-0.047	0.401	-0.043
South Africa	0.378	-0.064	0.351	-0.046	0.431	-0.037
Benin	0.315	-0.042	0.370	-0.022	0.414	-0.055
Mozambique	0.464	-0.039	0.427	-0.037	0.433	-0.057
Burkina Faso	NA	NA	0.401	-0.061	0.455	-0.049
Lesotho	0.394	-0.024	0.409	-0.033	0.490	-0.022
Mali	0.430	-0.046	0.441	-0.059	0.446	-0.047
Tanzania	0.581	-0.051	0.518	-0.059	0.545	-0.059
Madagascar	0.417	-0.042	0.502	-0.047	0.462	-0.063
Senegal	0.550	-0.051	0.518	-0.059	0.545	-0.059

5. Does a lack of social cohesion lead to conflict?

It is often suggested that a lack of social cohesion increases the risk of conflict. In order to investigate this hypothesis, we used data from the Armed Conflict Location and Event Data (ACLED) on a range of conflict events for our countries (see Raleigh et al. 2010). In particular, we included the number of battles, state-based battles, non-state battles, non-state ethnic battles, violence against civilians, government repression, protest and riots counted as one event category, and riots and protests counted separately for each of the three survey rounds. Definitions are provided in Appendix B. We hypothesize that low levels of social cohesion are associated with more conflict. In addition, we hypothesize that this relation is stronger for the variation-adjusted social cohesion index.

We estimate the following panel regression:

$$Conflict_{i,t+1} = a + b_0 SC_{i,t} + b_1 Y_{i,t} + u_i + \varepsilon_{i,t}$$

with i the country index and t the survey year; conflict refers to the conflict events enumerated above⁷; as our dependent variables are based on count data, we use a binomial regression. SC represents the social cohesion index (SCI or SCIVA), - Y is a control variable; u_i is a country-specific random element and $\varepsilon_{i,t}$ is the observation-level error term. For the control variable, we include GDP growth per capita (data from the World Bank). Our sample includes 54 observations: for 16 countries we have 3 observations (all rounds); for three countries we have two observations (only Rounds 4 and 5). To estimate the above panel, we use a random effects estimator with country-observations nested in countries. This estimator is consistent, as the Hausman test rejected the fixed effects model. Table 5 reports the estimation results. For all the armed conflict variables we find a negative and significant effect of social cohesion on conflict. However, we should note that not only may violence have been made more likely by the low social cohesion, but elements of social cohesion such as trust may have been reduced by anticipated violence. Non-violent events, such as protests, are not significantly related to SC. Yet, neither are riots and cases of government repression. Protests, riots, and repression events are, however, relatively prevalent in our dataset as compared to battle events.

Table 5: Regression results SCI

	SCI	% growth GDP capita	Constant
Battles	-162.67**	-13.09	87.88***
State-based battles	-115.10**	-1.59	23.24***
Non-state battles	-49.31**	-11.78	26.40***
Ethnic battles	-28.60***	-4.91	14.76***
Violence against civilians	-182.59**	-15.18	106.31***
Government repression	-10.08	-2.56	10.10
Protest/Riots	-63.00	-203.85	81.74
Riots	-2.47	-93.33	22.82
Protests	-68.10	-98.84	62.21

Table 6 reports the estimation results for the variation-adjusted social cohesion index. The results are very similar to the previous results with the unadjusted SCI. For a wide range of the conflict variables we find a negative and significant effect of social cohesion on armed conflict events. No significant relationship was found with non-violent conflicts such as protests.

⁷ As measured as the one-year period after the last interview date in a specific national survey.

However, there is no clear evidence that the variation-adjusted social cohesion index better explains the presence of conflict events than the unadjusted SCI.

Table 6: Regression results SCIVA

	SCI	% growth GDP capita	Constant
Battles	-160.53**	-14.17	79.22***
State-based battles	-118.29**	-2.94	57.87***
Non-state battles	-44.01**	-11.57	22.03***
Ethnic battles	-26.94**	-4.98	12.75***
Violence against civilians	-166.62*	-15.90	91.58***
Government repression	-9.66	-3.08	9.49
Protests/Riots	-33.70	-201.14	67.76
Riots	4.81	-92.54	19.97
Protests	-48.36	-97.17	51.55

6. Conclusion

Social cohesion is widely used as a way of describing societies. Yet it is rarely measured. This paper suggests a methodology for measurement. We argue that in order to begin to capture the complexity of the concept such a measure should include three components. These are inequality (the chief feature of European approaches to defining social cohesion with reference to social exclusion), trust (the chief feature of the US approach to social cohesion with reference to social capital), and identity (national versus group), which is an important feature of multiethnic societies. We argued that all three of these components should focus on *perceptions* of people in the society in question, rather than any attempt to get at more 'objective' measures, since social cohesion is a matter of how people perceive the society in which they live.

It is therefore necessary to rely on surveys of perceptions to apply the concept in practice. We used three rounds of Afrobarometer surveys from 2005, 2008 and 2012 to attempt to measure SC in 19 African countries. The data for the three components show low correlations across the individual indicators, suggesting that each is an independent element and that a composite indicator is desirable as no single component would capture the full concept. Of the three components, the trust component was the lowest in half or more of the countries. SCI ranking of countries was broadly consistent over the three years, although some countries changed positions.

If different groups across society have very different perspectives, this in itself is an indication of weak SC. In order to take this into account, we also calculated a variance-adjusted SCI (SCIVA) which might be thought to be a better measure than the SCI. This reduces the value of the SCI, but leaves country ranking largely the same.

Social cohesion is important in its own right – as living in a cohesive, high trust, low inequality society is likely to increase general wellbeing. This is an aspect of wellbeing that is left out of most indices of country performance, such as GNP or the HDI. It is also important because lack of cohesion is likely to increase the probability of conflict. Using data for a variety of conflict events, we found a significant relationship between both our measures of SCI and violent conflict in the subsequent year. However, the variation-adjusted measure did not show a stronger relationship than the unadjusted SCI. While there was a significant relationship between higher SC and lower violent conflict, no significant relationships were found for non-violent protests, riots, and cases of government repression

Any measure of a complex social phenomenon, like SC, is unavoidably reductionist. Nonetheless, it is helpful to have such a measure in order to give some meaning to assertions about whether a society's social cohesion is increasing or not, and comparative statements across countries, as well as to identify causes and consequences of social cohesion in a systematic way.

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Appendix A: Variation in social cohesion across ethnic groups (alphabetical order)

	2005 survey			2008 survey			2012 survey		
	CV	Range	Stdev	CV	Range	Stdev	CV	Range	Stdev
Benin	0.119	0.120	0.043	0.056	0.079	0.022	0.117	0.117	0.060
Botswana	0.105	0.168	0.043	0.097	0.115	0.042	0.111	0.138	0.035
Burkina Faso	NA	NA	NA	0.133	0.190	0.059	0.096	0.124	0.048
Ghana	0.073	0.079	0.027	0.120	0.136	0.041	0.168	0.171	0.066
Kenya	0.151	0.152	0.046	0.166	0.155	0.057	0.168	0.140	0.043
Lesotho	0.058	0.074	0.024	0.075	0.117	0.033	0.042	0.068	0.022
Liberia	NA	NA	NA	0.105	0.116	0.033	0.105	0.144	0.037
Madagascar	0.091	0.126	0.040	0.086	0.150	0.047	0.120	0.207	0.062
Malawi	0.092	0.113	0.035	0.096	0.125	0.049	0.096	0.148	0.045
Mali	0.096	0.149	0.046	0.119	0.183	0.059	0.091	0.157	0.045
Mozambique	0.076	0.130	0.039	0.080	0.124	0.037	0.117	0.207	0.059
Namibia	0.175	0.216	0.073	0.136	0.146	0.046	0.147	0.154	0.053
Nigeria	0.246	0.148	0.045	0.209	0.138	0.045	0.116	0.067	0.021
Senegal	0.085	0.149	0.049	0.102	0.182	0.058	0.098	0.172	0.055
South Africa	0.144	0.191	0.063	0.116	0.139	0.045	0.078	0.121	0.037
Tanzania	0.068	0.106	0.042	0.107	0.191	0.059	0.137	0.243	0.070
Uganda	0.301	0.266	0.094	0.320	0.268	0.077	0.228	0.198	0.057
Zambia	0.193	0.215	0.063	0.156	0.194	0.054	0.130	0.169	0.051
Zimbabwe	NA	NA	NA	0.133	0.164	0.048	0.156	0.204	0.067

Appendix B: Definitions of ACLED conflict variables

The following event types are based on the ACLED dataset. Some event types are directly taken from the dataset, other types used in our analysis were constructed by limiting events to certain ‘actor types’.

Battle:

“ACLED defines a battle as “a violent interaction between two politically organized armed groups at a particular time and location.” Typically these interactions occur between government militaries/militias and rebel groups/factions within the context of a civil war. However, these interactions also include militia violence, rebel on rebel violence and military on military violence. There is no causality minimum necessary for inclusion.

The specific elements of that definition are as follows:

(1) A violent interaction is the use of armed force, including guns or military hardware, machetes, knives or any tool to inflict harm upon the opposing side.

(2) Organized armed groups including but not limited to rebel and government groups.”

(codebook 3, 2014, p.9)

Depending on the outcome of a battle, ACLED distinguishes ‘Battle-No change of territory’, ‘Battle-Non-state actors overtake territory’, and ‘Battle-Government regains territory’. For the ‘Battle’ events used in our analyses, these types have been taken together.

State-Based Battle:

This constructed event is a Battle which involves a government actor (Code 1 in the INTER1 or INTER2 variables).

Non-State Battle:

This constructed event is a Battle which does not involve a government actor (Codes 2 (rebel force), 3 (political militia), 4 (ethnic militia) in the INTER1 and INTER2 variables).

Non-State Battle between communal groups:

This constructed event is a Battle which involves ethnic militias (Code 4 in the INTER1 and INTER2 variables)

Violence Against Civilians:

“Violence against civilians is defined as deliberate violent acts perpetrated by an organized political group such as a rebel, militia or government force against an unarmed non-combatant. These acts are political and harm or kill civilians, and are the sole act in which civilians are an actor. There is no minimum number of victims needed to qualify as an ACLED event.

Although the victims can be combatants in a different context, here they are UNARMED and NOT ABLE to defend themselves. One-sided violence also includes inflicting significant harm (e.g. bombing, shooting, torture, rape, mutilation etc) or accosting victims (e.g. kidnapping and disappearances). It does not include incidents in which people are not physically harmed, (e.g. looting or burning, destruction of sacred spaces, and forced displacement.)” (codebook 3, 2014, pp. 11-12)

Government Repression:

Violence against civilians perpetrated by a government actor (Code 1 in the INTER1 or INTER2 variables).

Riots/Protest:

“A riot is defined as „a violent disturbance of the public peace by three or more persons assembled for a common purpose.” ACLED records reported information on both spontaneous and organized rioting. Organized riots can be planned by a previously recognized political group. The rioting group is not necessarily an inherently violent organization. A political party can riot (i.e. ZANU-PF in Zimbabwe). If the protesters or rioters are representing a group, the name of this group is recorded in the „ally” section. Spontaneous riots primarily involve civilians, without direct reference to an organized political group. Protests are nonviolent spontaneous organizations of civilians for a political purpose. Protesters do not engage in violence, and if violence occurs during a protest as a result of protesters” actions, this event is coded solely as a riot. If violence is done to protesters in the event of a protest, the event is coded solely as an act of ‘violence against civilians.’” (codebook 3, 2014, p.11).

Riots:

The Riots/Protests event type in ACLED is limited to Riots by only counting cases in which actors were defined as ‘Rioters’ (Code 5 in the INTER1 or INTER2 variables). Events are limited to the Riots/Protest event type to avoid double-counting as Rioters can also perpetrate ‘Violence against civilians’ in the dataset.

Protests:

The Riots/Protests event type in ACLED is limited to Protest by only counting cases in which actors were defined as ‘Protesters’ (Code 6 in the INTER1 or INTER2 variables). Events are limited to the Riots/Protest event type to avoid double-counting as Protesters can also be the victim of ‘Violence against civilians’ in the dataset (e.g. in the case of government repression, see above).

Distinction between external and internal events

All events were limited to events perpetrated by internal actors to ensure compatibility with the Afrobarometer surveys. The following procedures were followed:

For the event type "battle - no change of territory" data was browsed for 2 opposing national armies and/or police forces via the variables ACTOR1 and ACTOR2. These cases are dropped. This also includes national military forces battling mutinous forces of a foreign national army.

For all 3 battle categories, we filter out cases in which armed groups operate across the border of the country to which the group belongs. Government troops *operating* on foreign territory are considered as international cases, e.g. Mauritanese military in Mali; Congolese army in Uganda. However, events in which international actors (INTER1 or INTER2 = 8) assist in fighting an internal rebel group is considered as internal conflict (whether or not the government they are assisting is identified in the ALLY categories), e.g. the French military in Mali. If an organized rebel group (i.e. organization name such as Lord Resistance Army) operates outside of the country of origin, this is seen as international (e.g. Sudan's liberation army operating in Uganda). Often we find ethnic militias or unidentified armed groups with a certain nationality between brackets. If the nationality of one of the armed groups differs from the country in which the event took place we decide that this is an international case.

For the category Riots/Protests we browse ACLED for events identifying one of the actors as "international" or with a nationality foreign to the country. This is based on the ACTOR variables or the NOTES variable. If foreign nationals protest or riot in a particular country, these cases are dropped. For the category "Violence against civilians", we also browse ACLED for events identifying one of the actors as "international" or as having a nationality foreign to the country. If foreign civilians are victims of the violence, this is generally regarded as internal conflict (e.g. journalists, oil workers). However, if the perpetrators are not from the country where the event took place, the cases are dropped. Finally, as pirating can be regarded as an international crime, and as it is difficult to pinpoint the nationality of the pirates, all pirating cases are dropped.